



Reference (15)

DECLARATION

I, Maho KASEKI, c/o the Inoue & Associates of 3rd Floor, Akasaka Habitation Building, 3-5, Akasaka 1-chome, Minato-ku, Tokyo, Japan do solemnly and sincerely declare that I am conversant with the Japanese and English languages and that I have executed with the best of my ability this partial translation into English of Unexamined Japanese Patent Application Laid-Open Specification No. 2000-172085 and believe that the translation is true and correct.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

December 11, 2004  
(Date)

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Partial English Translation of Unexamined Japanese Patent Application Laid-Open Specification No. 2000-172085

(1) Front page (page 1), upper portion:

- (19) Japan Patent Office (JP)
- (12) Laid-Open Patent Gazette (A)
- (11) Unexamined Japanese patent Application Laid-Open Specification No. 2000-172085 (P2000-172085A)
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- (21) Patent Application No. Hei 10-347619
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Jun Nakajima, patent attorney, and three others
- (54) [Title of the Invention] Intermediate transfer member  
and image forming apparatus using the same

(2) At page 2, left column, lines 1 to 35:

[Scope of Claims for Patent]

[Claim 1] An intermediate transfer member for use in an image forming apparatus comprising a latent image carrier for forming thereon an electrostatic latent image in accordance with the information on a desired image; a developing unit for visualizing said electrostatic latent image formed on said latent image carrier with a toner, thereby forming a toner image; an intermediate transfer member for primarily transferring thereonto the toner image from said latent image carrier by a primary transfer unit before fixation of the toner onto said latent image carrier; and a secondary transfer unit for secondarily transferring to a recording medium the toner image from said intermediate transfer member before fixation of the toner onto said intermediate transfer member, wherein said intermediate transfer member is produced from a polyimide resin material having agglomerated particles of carbon black dispersed therein, said agglomerated particles having a particle diameter of 1  $\mu\text{m}$  or more, wherein the number of said agglomerated particles is 50 or less per unit cross-sectional area ( $0.1 \text{ mm}^2$ ) of said polyimide resin material.

[Claim 2] The intermediate transfer member according to claim 1, wherein the number of said agglomerated particles is

5 or less.

[Claim 3] The intermediate transfer member according to claim 1 or 2, wherein the degree of dispersion of said agglomerated particles having a particle diameter of 1  $\mu\text{m}$  or more is 0.6 or less.

[Claim 4] The intermediate transfer member according to any one of claims 1 to 3, wherein the ratio of the total area of said agglomerated particles having a particle diameter of 1  $\mu\text{m}$  or more to the cross-sectional area of said intermediate transfer member is 0.2 % or less, as measured with respect to a portion of said intermediate transfer member, which portion ranges from a transfer surface thereof to a depth of 0.01 mm.

[Claim 5] The intermediate transfer member according to any one of claims 1 to 4, which has a surface resistivity in the range of from  $10^9$  to  $10^{14}$   $\Omega/\square$ .

[Claim 6] An image forming apparatus comprising a latent image carrier for forming thereon an electrostatic latent image in accordance with the information on a desired image; a developing unit for visualizing said electrostatic latent image formed on said latent image carrier with a toner, thereby forming a toner image; an intermediate transfer member for primarily transferring thereonto the toner image from said latent image carrier by a primary transfer unit before fixa-

tion of the toner onto said latent image carrier; and a secondary transfer unit for secondarily transferring to a recording medium the toner image from said intermediate transfer member before fixation of the toner onto said intermediate transfer member, wherein said intermediate transfer member is the intermediate transfer member of any one of claims 1 to 5.

(3) At page 4, column 5, line 44 to column 6, line 14:

[0013] The present invention has been completed, based on these novel findings. That is, the intermediate transfer member of the present invention is characterized in that the intermediate transfer member is produced from a polyimide resin material having agglomerated particles of carbon black dispersed therein, the agglomerated particles having a particle diameter of 1  $\mu\text{m}$  or more, wherein the number of the agglomerated particles is 50 or less per unit cross-sectional area ( $0.1 \text{ mm}^2$ ) of said polyimide resin material. Even when the surface resistivity of the intermediate transfer member is lowered, the local variation of printing density does not occur and a satisfactory image can be obtained as long as the difference in the surface resistivity between an image

-bearing portion of the intermediate transfer member having a relatively thick toner layer and the surrounding portions is 0.7 ( $\log \Omega/\square$ ) or less. In other words, when an intermediate transfer member is produced from a polyimide resin having agglomerated particles of carbon black dispersed therein, the agglomerated particles having a particle diameter of 1  $\mu\text{m}$  or more, wherein the number of the agglomerated particles is 50 or less per unit cross-sectional area (0.1  $\text{mm}^2$ ) of the polyimide resin material, the lowering of surface resistivity of the intermediate transfer member can be suppressed within the above-mentioned range, thus removing a danger of lowering of the surface resistivity of the intermediate transfer member which occurs due to the discharge between the toner particles present in the image portion, wherein the discharge is caused by the transfer voltage applied from the primary transfer unit. Therefore, even when a primary transfer is repeatedly performed, the output images are free from problems, such as decrease in the printing density and disadvantageous partial print omissions. It is preferred that the number of agglomerated particles of carbon black contained in the polyimide resin material used in the intermediate transfer member of the present invention is 5 or less. It is more preferred that the polyimide resin material has no agglomerated parti-

cle having a particle diameter of 1  $\mu\text{m}$  or more. With respect to the "cross section" used in the expression "unit cross-sectional area" used herein, this term means a cross section obtained by cutting the intermediate transfer member in a direction perpendicular to the surface thereof.